

Amendment to the claims

1. (Twice Amended). An article of manufacture comprising a substantially transparent substrate of a size and shape suitable for use as [a decorative] an ornamental object [gemstones and ornaments] and a multilayer thin film interference coating over substantially the entire surface of said substrate, said coating consisting of alternating layers of substantially nonabsorbing materials with a relatively high refractive index and a relatively low refractive index with respect to each other, the thicknesses and identities of said layers being chosen so that the entire coating will preferentially reflect at least some of the incident light with wavelengths between 400 nm and 700 nm inclusive.

13. (Twice Amended). An article of manufacture comprising a substantially transparent substrate having at least one curved surface and at least two dimensions substantially the same and a multilayer thin film interference coating over substantially the entire surface of said substrate, said coating consisting of alternating layers of substantially nonabsorbing materials with a relatively high refractive index and a relatively low refractive index with respect to each other, the thicknesses and identities of said layers being chosen so that the entire coating will preferentially reflect and transmit at least some of the incident light within predetermined wavelength bands.

14. The article of Claim 13 wherein the entire coating preferentially transmits at least some of the incident light above a predetermined wavelength.

15. The article of Claim 13 wherein the entire coating preferentially transmits at least some of the incident light below a predetermined wavelength.

16. The article of Claim 13 having a size and shape suitable for use as a decorative object selected from the group consisting of gemstones and ornaments.
17. (Twice Amended). An article of manufacture comprising:
a substrate having height, width, and depth dimensions substantially the same
formed from a substantially transparent material; and a substantially uniform multilayer
thin film interference coating over substantially the entire surface of said non-planar
substrate, said coating comprising alternating layers of materials having different
refractive indices to thereby form a coating which is substantially transmissive of incident
light at predetermined wavelengths.
18. The article of Claim 17 wherein the coating is substantially transmissive of
incident light above a predetermined wavelength.
19. The article of Claim 17 wherein the coating is substantially transmissive of
incident light below a predetermined wavelength.
20. The article of Claim 17 wherein the coating is substantially transmissive of
incident light within a predetermined wavelength band.
21. The article of Claim 17 having a size and shape suitable for use as a
decorative object selected from the group consisting of gemstones and ornaments.
22. (Twice Amended). A uniformly coated object comprising a substrate
having a depth dimension substantially the same as either its height or width dimensions
formed from a substantially transparent material and a coating over substantially the
entire surface thereof, said coating comprising alternating layers of materials having

relatively high and relatively low reflective indices relative to each other and being substantially uniform and over substantially the entire surface of said substrate.

23. The object of Claim 22 wherein said coating controls the transmission of incident light at predetermined wavelengths.

24. The object of Claim 22 wherein said coating controls the absorption of incident light at predetermined wavelengths.

25. The object of Claim 22 wherein said coating controls the reflection of incident light at predetermined wavelengths.

26. The article of Claim 22 having a size and shape suitable for use as a decorative object selected from the group consisting of gemstones and ornaments.

27. (Amended). A decorative object comprising a substantially transparent substrate having at least two non-parallel curved surfaces and a coating uniformly covering substantially the entire surface of the substrate, said coating comprising alternating layers of materials having differing refractive indices to thereby substantially transmit all of the incident light at predetermined wavelengths.

28. (Twice Amended). A method of making a uniformly coated object, said method comprising the steps of:

(a) providing a substrate having maximum height, width, and depth dimensions substantially the same;

(b) depositing a coating over substantially the entire surface of the substrate, the coating comprising alternating layers of materials having different indices of

refraction so that the coating is substantially transmissive of light at predetermined wavelengths.

29. The method of Claim 28 wherein the coating is deposited by low pressure chemical vapor deposition.

30. The method of Claim 28 wherein the object has a size and shape suitable for use as a decorative object selected from the group consisting of gemstones and ornaments.

31. The method of Claim 28 wherein the coating is substantially transmissive of incident light above a predetermined wavelength.

32. The method of Claim 28 wherein the coating is substantially transmissive of incident light below a predetermined wavelength.

33. The method of Claim 28 wherein the coating is substantially transmissive of incident light within a predetermined wavelength band.

34. The method of Claim 28 having a size and shape suitable for use as a decorative object selected from the group consisting of gemstones and ornaments.

35. (Twice Amended). A method of making a uniformly coated object comprising the steps of:

(a) providing a substrate having at least one curved surface and at least two dimensions substantially the same;

(b) depositing a coating over substantially the entire surface of the substrate, the coating comprising alternating layers of materials having different indices of

refraction so that the coating is substantially transmissive of light at predetermined wavelengths.

36. The method of Claim 35 wherein the coating is deposited by low pressure chemical vapor deposition.

37. The method of Claim 35 wherein the coating is substantially transmissive of incident light above a predetermined wavelength.

38. The method of Claim 35 wherein the coating is substantially transmissive of incident light below a predetermined wavelength.

39. The method of Claim 35 wherein the coating is substantially transmissive of incident light within a predetermined wavelength band.

40. An article of manufacture comprising:
a substantially transparent substrate having a desired shape with at least one curved surface and substantially the same maximum dimension in at least two orthogonal directions; and

a multilayer thin film interference coating covering over substantially the entire surface of said substrate,

said coating comprising alternating layers of substantially non-absorbing materials (a) where the materials in said alternating layers have materially different refractive indices with respect to each other and (b) where the thicknesses of said alternating layers and the identities of the materials are such that said coating will preferentially reflect at least some of the incident light with wavelengths between 400 nm and 700 nm inclusive.

41. The article of Claim 40 in which said substrate is selected from the group consisting of silicon dioxide, aluminum oxide, tantalum oxide, niobium oxide, titanium dioxide, hafnium dioxide, zirconium dioxide, magnesium fluoride, calcium fluoride, zinc sulfide, zinc selenide and carbon.

42. The article of Claim 40 in which the substrate is comprised of a polymeric material and said alternating layers are comprised of metal oxides.

43. The article of Claim 40 wherein said coating is substantially transmissive of incident light within a predetermined band of wavelengths.

44. An article of manufacture comprising:
a substantially transparent substrate having a desired shape with substantially the same maximum dimension in three orthogonal directions and at least one generally circular cross-section; and

a multilayer thin film interference coating covering over substantially the entire surface of said substrate,

said coating comprising alternating layers of substantially non-absorbing materials (a) where the materials in said alternating layers have materially different refractive indices with respect to each other and (b) where the thicknesses of said alternating layers and the identities of the materials are such that said coating will preferentially reflect at least some of the incident light with wavelengths between 400 nm and 700 nm inclusive.

45. (Amended). A method of making an article of manufacture comprising the steps of:

(a) providing a substantially transparent, three dimensional substrate having at least one curved surface and substantially the same maximum dimensions in at least two orthogonal directions;

(b) depositing a multilayer thin film interference coating on substantially the entire surface of the substrate,

said coating comprising alternating layers of substantially nonabsorbing materials (i) where the alternating layers have materially different refractive indices with respect to each other and (ii) where the thicknesses of the alternating layers and the identities of the materials are such that the coating will preferentially reflect at least some of the incident light with wavelengths between 400 nm and 700 nm inclusive.

46. The method of Claim 44 wherein the substrate is comprised of a polymeric material and the materials in the alternating layers are metal oxides.

47. The method of Claim 44 wherein the coating is substantially transmissive of incident light within a predetermined band of wavelengths.

48. (Amended). A method of making an article of manufacture comprising the steps of:

(a) providing a substantially transparent, three dimensional substrate having substantially the same maximum dimensions in at least two orthogonal directions and at least one generally circular cross-section;

(b) depositing a multilayer thin film interference coating on substantially the entire surface of the substrate by a chemical vapor depositing process,

said coating comprising alternating layers of substantially nonabsorbing materials (i) where the alternating layers have materially different refractive indices with respect to each other and (ii) where the thicknesses of the alternating layers and the identities of the materials are such that the coating will preferentially reflect at least some of the incident light with wavelengths between 400 nm and 700 nm inclusive.

Status Of Claims And Support For Claim Changes

Claims 1-12 that issued in U.S. Patent No. 6,197,428 are pending. Claim 1 has been amended as shown on sheet 2 of this Response.

Claims 13-48 were previously added by incorporating the claims into the specification at the time the re-issue application was filed. Claims 13-48 are pending.

The amendment of Claim 1 has been discussed with and approved by the examiner.

The support for the amendment of Claims 13, 17, 22, 28, 35, 45 and 48 may be found in Figure 1 and the turtle shape disclosed at column 5, line 46.

Further support for all pending claims can be found in the specification and other remarks, for example, pages 6-9 of the Amendment filed April 19, 2004.